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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Engineering

*Mrs. Graf
Miss Church*

MONTHLY NEWS LETTER

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: The yellow memorandum copies of bills of lading should be for- :
:warded to the Washington Office when the original bill of lading is :
:issued. Any such copies now in the field files should be trans- :
:mitted to this office promptly. :
:.....

.....
: Attention is called to the desirability of becoming familiar :
:with the location of the hospitals and doctors which the Employees' :
:Compensation Commission has designated as Government representatives :
:in your vicinity. These are listed in the pamphlet, "Medical :
:Facilities", previously supplied to you. Increasing emphasis is :
:being placed on the requirement that, whenever possible, people :
:suffering from service disabilities receive treatment at such insti- :
:tutions. Failure to do so may result in the disallowance of bills :
:covering medical attention. :
:.....

It is suggested that all members of the American Society of Agricultural Engineers ask that the name of our Bureau be added after their names in the membership directory of the Society. The following form of listing is suggested:

(Name) _____ (Official title) _____
Bureau of Agricultural Engineering, U. S. Department of
Agriculture
(Mail address) _____

The annual outlook conferences of the Bureau of Agricultural Economics and State extension and economic workers is being held this week in Washington. S.H. McCrory and S.P. Lyle of this Bureau are attending the meeting. Mr. Lyle will also attend the meeting of the Southern Agricultural Workers Association at New Orleans next week. On this trip he will confer with extension workers in Georgia, Alabama, Louisiana, Tennessee and Kentucky.

A study of the economic and engineering features of the Little River Drainage District has been undertaken by the Division of Drainage and Soil Erosion Control to evolve a plan which will enable the district to liquidate its financial obligations. Wells A. Hutchins and C. R. Shier have assisted L. A. Jones in this study.

At the January meeting of the American Society of Civil Engineers the J. James R. Croes medal was awarded to D. L. Yarnell and Floyd A. Nagler for their paper "Effect of Turbulence on the Registration of Current Meters." This medal is awarded annually for an outstanding contribution to engineering.

The field work on ditch cleaning experiments in Delaware, conducted by W.D. Ellison, has been completed and preparation of the report has been begun.

B.S. Clayton recently ran levels over the muck subsidence lines near Fellsmere, Fla., which indicated that there has been a subsidence ranging from 0.2 to 0.5 foot since 1929. However this area was partly burned over last spring and later flooded which doubtless affected the results.

Data on cost of small check dams in terrace outlet ditches on the Temple farm have been compiled by H. O. Hill. Dams of creosoted lumber for ditches 6 to 12 feet in top width and $1\frac{1}{2}$ to 6 ft. deep cost from \$2.65 to \$5 each. A rubble masonry dam in a ditch about $4\frac{1}{2}$ feet deep and 10 ft. in top width cost \$6.30, and a woven wire dam in a ditch about $3\frac{1}{2}$ ft. deep and 12 ft. in top width cost \$2.80.

Cost data on terrace construction, including necessary ditches and all fill work on 3,347 acres of land belonging to the Aetna Life Insurance Co. were submitted to the Guthrie office. The average cost per acre ranged from \$1.71 to \$6.67 depending upon amount of ditching, kind and condition of soil, and number and size of gullies. Most of the construction work was done with two 30 horsepower tractors drawing a two-wheel grader with a 10-foot blade.

P.C. McGrew of the Pullman, Wash. station has completed the installation of a water stage recorder on the Palouse river for the measurement of run-off from an area consisting of approximately 28 square miles of wheat land. Two other gaging stations have also been installed, one for the measurement of run-off from 30 acres of summer fallow and another from 20 acres of stubble area. A warm wind during the first week in January caused the rapid melting of an 18-inch snow and produced a greater rate of run-off than at any time since the establishment of the Pullman station. All terraces held satisfactorily except one which was overtopped due to accumulation of ice and snow in the channel.

H.E. Bergschneider reports a rainfall of 6 inches in 36 hours on the State farm near Ardmore, Okla. Excellent run-off records were obtained from all measuring apparatus, which will furnish the first data collected on soil losses on both terraced and unterraced areas on the Ardmore project. These records are of particular value because the slope of the land is only about 2 per cent, which is less than on any other areas where run-off measurements are being made.

W.W. McLaughlin and M. R. Lewis conferred at Riverside, Calif., with Dr. C. S. Scofield of the Bureau of Plant Industry concerning plans for cooperative work at Hermiston, Ore., and Prosser, Wash. These proposed studies are in addition to the cooperative work now under way at Bard, Calif., and Scottsbluff, Nebr.

At the meeting of the Nebraska State Irrigation Assoc. at Scottsbluff on December 11-13, R.L. Parshall presented a paper concerning Parshall measuring flumes, and incidentally discussed the subject of the vortex-tube and riffle-deflector sandtraps. Officials of the Pathfinder Canal are considering construction of a Parshall flume of 50-ft. throat width to measure a flow of more than 2,000 second-feet.

A new type of smokeless orchard heater was installed on trial at Pomona, Calif., on Dec. 19, according to Colin A. Taylor. This heater burns a mixture of 30 per cent propane and 60 per cent butane. It is entirely smokeless and odorless and has had no harmful effects on the young plants as there are apparently no toxic gases given off. In fact, it is very probable that the rate of plant growth will be materially increased, as Lundegardh has shown that doubling the carbon dioxide concentration of the air increases the rate of growth of beans four times when sufficient light intensity is available.

O. A. Faris spent several days in the Berkeley office recently in conference regarding his recently completed manuscript on "The Silt

Load of Texas Streams" proposed for early publication. He also inspected several projects being carried on by the Division of Irrigation in the Sacramento-San Joaquin delta region and in southern California.

A paper entitled "Some Responses of Anjou Pear Trees to Variations in Available Soil Moisture" by Dr. W. Aldrich of the Bureau of Plant Industry and Arch Work of this bureau was presented by Dr. Aldrich at the annual meeting of the American Society of Horticultural Science at Atlantic City, N.J., December 28. It is shown in this paper that during the season of 1932 the rate of growth of twigs and pears on pear trees on a heavy soil in the Medford area was definitely reduced by a decrease in the moisture content of the soil long before the average moisture content of the upper three feet of soil reached the wilting point. Mr. Work's further study of data secured by him during the past three years has disclosed a very close correlation between the slowing down of the rate of growth of pears and the decrease in the quantity of soil moisture available.

The Division of Irrigation has prepared during the past month a number of radio talks for use by the Washington office of the National Radio Service of the Department. About 20 talks are contemplated for this spring.

R. M. Merrill spent January 4 and 5 at the Washington office in connection with the European corn borer project. Then at Trenton, N.J. he conferred with Frank Irons and V. D. Young, and later drove with Mr. Irons to South Norwalk, Conn., where corn borer matters were discussed with Mr. Worthley of the Bureau of Plant Quarantine and Control. R. M. Merrill spent two days in the Province of Ontario conferring with Provincial Entomologists in regard to corn borer control problems in Canada.

A new device for measuring width and depth of plowing in draft tests has been designed and constructed in the Toledo shop. It is hoped that with this device these measurements can be made quicker and more accurately than with any method previously used.

Mobile machine shop units recently transferred from the Ordnance Department have been shipped from Toledo to Frank Irons at Trenton, N.J., G. A. Cumings at Rosslyn, Va., E. M. Dieffenbach at Albany, Ga., and E. D. Gordon at Jeanerette, La.

From a report by E. D. Gordon on forage dehydration it was found that the cost of drying a ton of alfalfa with a 70 per cent moisture content at Jeanerette is \$9.50 exclusive of field costs but inclusive of baling costs while hay having a 60 per cent moisture content could be dried at a cost of about \$7.15 per ton.

A pusher-type, two-row cotton stalk shaver, mounted on a tractor and equipped with shields to guide the cut stalks into windrows was built at Presidio, Tex., by D. A. Isler. He reports that results of preliminary trials are promising.

A series of tests has been started by W. M. Hurst assisted by W. R. Humphries to determine the effect of air temperatures and humidity on the moisture content of cereal grain, flaxseed, soybeans, cotton and forage. The tests are being made in the fertilizer machinery laboratory at Arlington Experiment Farm, Va.

R. B. Gray spent January 24 in Trenton conferring on corn borer matters and discussing with the entomologists possible cooperation on Japanese beetle control machinery investigations. Mr. Gray plans to spend the balance of the week with R. M. Merrill at Toledo investigating the performance of various alcohol-gasoline fuel blends in cars, trucks and tractors.

An underfeed stoker installation in the Maryland State Hospital at Catonsville, Md. was recently inspected by A. H. Senner. This stoker utilizes a high coking coal such as is being used in the stokers at Arlington Experiment Farm. It is hoped that the information obtained at Catonsville will prove of value in solving some of the difficulties experienced with this type of coal when using stokers.

W. V. Hukill is taking part in a transportation test of 6 carloads of apples shipped from Wenatchee, Wash., to New York City to determine the best methods of protecting the loads against freezing. Five methods of operating heaters and use of extra insulation to protect against low temperatures are being tested. In one car an attempt is being made to utilize the latent heat of water in wet sawdust in the bottom of the car. It is expected that if freezing temperatures are encountered the latent heat of the water will assist in protecting the load.

A scheme for improving the air circulation through potato bins and to aid in removing the potatoes is being tried out by A. D. Edgar at Presque Isle, Maine. A slatted trough is laid on the floor of the bin before filling, with the end of the trough opening into the main alley of the house to permit circulation of air up through the potatoes. For emptying the bin, a small motor-driven rope conveyor is slid into the trough and the top of the trough is removed to permit the potatoes to roll onto the conveyor which delivers them direct to the grader without shoveling or forking. It is hoped that this method will also reduce the bruising of the potatoes in handling.

A tentative selection of farm building plans prepared by the Division of Plans and Service and the departments of agricultural engineering and extension services of the various States, has been completed under the supervision of M. C. Betts, Wallace Ashby and S. P. Lyle and is being made ready for distribution among the cooperating agencies. These plans are for inclusion in a proposed plan-exchange service, the purpose of which is to make available to any of the cooperative agencies such plans of other agencies as may be applicable to their respective State building-plans services in order to eliminate duplication in the preparation of farm-building plans and at the same time promote wider distribution of new designs.